Innovation in energy sector (ECON856_SOLEM)

ECTS
1 crédits

Composante
Polytech Annecy-Chambéry

En bref

- **Langues d'enseignement:** Anglais
- **Méthodes d'enseignement:** En présence
- **Forme d'enseignement :** Cours magistral
- **Ouvert aux étudiants en échange:** Oui

Présentation

Description

Semester 8

Duration : Within one semester

Type: MandatoryThe class is divided into 9 hours of class (CM) and 9 hours of applications (TD).

Evaluation: One written final exam (50%) + One presentation (50%)

Teacher: Andrea Rangel

Objectifs

This class aims at giving students a theoretical background in innovation and network economics in the energy sector. The course aims at exposing students to the development of innovations for the energy transition. By the end of the class, the student should have a relevant literary background of innovation and network economics in the energy sector (e.g., their history, main developments, main challenges, current state, future previsions).

Heures d'enseignement

CM	Cours Magistral	15h

Plan du cours

Plan
1. The enigma of economic growth,
2. Secular stagnation and the need for innovation,
3. Green innovation and sustainable growth,
4.Network economics and the green transition.

Compétences visées

- Gain a better understanding of the role of innovations and the history of economics of growth.
- Understanding the key role of the state (institutions) and civil society in stimulating innovation.
- Understanding key economic theories and models for innovation, growth, and the energy transition.
- Understand the economics of networks and their critical role in the energy transition.
- Being able to elaborate on the role of innovation as a driver for the Net-Zero-Emissions world by 2050.
- Discuss the limitations and advances in different sectors for the energy transition

Bibliographie

References

Hafner, M. & Luciani G. (2022) "The Palgrave Handbook of International Energy Economics," Springer Books, Springer, number 978-3-030-86884-0, June.
Daron Acemoglu, 2007. "Introduction to Modern Economic Growth," Levine's Bibliography 122247000000001721, UCLA Department of Economics.
IEA (2023), Tracking Clean Energy Progress 2023, IEA, Paris https://www.iea.org/reports/tracking-clean-energy-progress-2023, Licence: CC BY 4.0.
Galor, O. (2005) From Stagnation to Growth: Unified Growth Theory. Minerva Center for Economic Growth Working Paper No. 2004-1, Available at SSRN: https://ssrn.com/abstract=651526.
Weitzman, L. (2007) A Review of the Stern Review on the Economics of Climate Change
Weitzman, Journal of Economic Literature, VOL. 45, NO. 3, (pp. 703-724).

Mandatory reading list:

Acemoglu, D., and Aghion, P., and Barrage, L., & Hemous, D. (2023) Climate Change, Directed Innovation, and Energy Transition: The Long-Run Consequences of the Shale Gas Revolution. NBER Working Paper No. w31657, Available at SSRN: https://ssrn.com/abstract=4567661.
Aghion, P., Dechezlepretre, A., Hemous, D., Martin, R. & Van Reenen, J. (2012) "Carbon Taxes, Path Dependency and Directed Technical Change: Evidence from the Auto Industry," Climate Change and Sustainable Development 143129, Fondazione Eni Enrico Mattei (FEEM).

Grégoire-Zawilski, M. & Popp, D., (2024) Do technology standards induce innovation in environmental technologies when coordination is important?, Research Policy, Volume 53, Issue 1, 104888, ISSN 0048-7333, https://doi.org/10.1016/j.respol.2023.104888.
Acemoglu, D., Aghion, P., Barrage, Lint. & Hémous, D. (2023) Green innovation and the transition toward a clean economy. No WP23-14, Working Paper Series, Peterson Institute for International Economics, https://EconPapers.repec.org/RePEc:iie:wpaper:wp23-14.
Maradana, R., Pradhan, R. & Dash, S. (2017) Does innovation promote economic growth? Evidence from European countries. J Innov Entrep 6, 1, https://doi.org/10.1186/s13731-016-0061-9
Naber, R., Raven, R., Kouw, M. & Dassen, T. (2017) Scaling up sustainable energy innovations, Energy Policy, Volume 110, Pages 342-354, ISSN 0301-4215, https://doi.org/10.1016/j.enpol.2017.07.056.
Dehdarian, A. & Tucci, C. (2021) A complex network approach for analyzing early evolution of smart grid innovations in Europe, Applied Energy, Volume 298, 117143, ISSN 0306-2619, https://doi.org/10.1016/j.apenergy.2021.117143.
Jones, A. & Cartwright, P. (2011). Network Economics : Developing and Implementing Renewable Energy Programs. Management & Avenir, 42, 341-358. https://doi.org/10.3917/mav.042.0341
Barrage, L. & Nordhaus, W. (2024) "Policies, projections, and the social cost of carbon: Results from the DICE-2023 model," Proceedings of the National Academy of Sciences, vol 121(13).

Libellé court : ECON856_SOLEM

Nature : EC

Infos pratiques

Lieux

Le Bourget-du-Lac (73)

Campus

Le Bourget-du-Lac / campus Savoie Technolac